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ABSTRACT

In this study, which focused on the influence of leaders in bureaucratic structures on the opinions of staff members, 45 staff members in each of two state divisions of vocational and technical education responded to a questionnaire soliciting nominations to determine opinion leaders. In addition, personal interviews were conducted with selected members of the staffs. Socicmetric analysis was used to compute scores for opinion leadership and to determine the shape of the communications cluster associated with selected information requests. The most important finding was the highly significant relationship between the opinion leadership and the formal authority structure in each division. With one exception, all opinion leaders were either state directors, associate directors, or head state supervisors. Opinion leaders and isolates alike tended to be oriented to change. No differences in the extensiveness of communication nets were found between opinion leaders and isolates on profession-relevant information or general vocational and technical information. Sources of profession-relevant information were no more diverse than sources of work-relevant information. This communication pattern tended to place the director and his close associates in a gatekeeping role for activities pursued by supervisory staff. (Author/SB)

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OPINION LEADERS IN THE ORGANIZATIONAL STRUCTURE OF TWO STATE DIVISIONS OF VOCATIONAL AND TECHNICAL EDUCATION

THE CENTER FOR VOCATIONAL
AND TECHNICAL EDUCATION

THE OHIO STATE UNIVERSITY
1960 Kenny Rd., Columbus, Ohio 43210

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RESEARCH AND DEVELOPMENT
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OPINION LEADERS IN THE ORGANIZATIONAL STRUCTURE OF TWO STATE DIVISIONS OF VOCATIONAL AND TECHNICAL EDUCATION

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FOREWORD

Opinion leaders in state divisions of vocational and technical education influence the ability of the organization to initiate as well as regulate innovative program development. The congruency of communication patterns between the informal and formal authority structure in state divisions can affect the effectiveness of innovative program implementation as well.

This research was conducted in two state divisions located in different geographic regions of the country. The identification of the states and persons holding positions in the state divisions must remain anonymous to protect the identification of the respondents. Never the less, we are indebted to the state directors and their staff members of these states for their excellent cooperation.

We appreciate reviews of the publication by Roland J. Krogstad, director of the research coordinating unit, Madison, Wisconsin; Richard A. Baker, executive director of the advisory council on vocational education, Auburn, Alabama; Warren Lasell, research and development specialist, CVTE; and N. L. McCaslin, research and development specialist, CVTE.

Appreciation is extended to the component staff for conduct and completion of the study: William L. Hull, principal investigator; Earl B. Russell, research and development specialist; and Lloyd H. Blanton, research associate.

Robert E. Taylor
Director
The Center for Vocational
and Technical Education

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SUMMARY

State divisions of vocational and technical education play a pivotal role in the development of education improvement strategies for local programs of vocational and technical education. This study focuses on leadership in bureaucratic structures and its influence on the opinions of staff members. Relationships among opinion leadership, formal authority, and staff members' orientation to change were compared in eight hypotheses. Each hypothesis tested a selected communication request for information on topics related to organization policy, the profession, and speciality information in vocational and technical education.

Forty-five staff members in each of two state divisions of vocational and technical education responded to a questionnaire soliciting nominations to determine opinion leaders. These data represented 100 percent of the potential respondents in division #2 and 90 percent of the potential respondents in division #1. In addition to the questionnaire, personal interviews were conducted with selected members of the staffs. Sociometric analysis was used to compute scores for opinion leadership and to determine the shape of the communications cluster associated with selected information requests.

The most important finding of the study was the highly significant relationship between the opinion leadership and the formal authority structure in each division. With one exception, all opinion leaders named were either state directors, associate directors, or head state supervisors. This opinion leader-authority relationship was supported for general information and for speciality information in vocational and technical education at the .01 level of significance. Opinion leaders nominated as most knowledgeable about matters of policy were selected almost exclusively from the director and associate director levels in each organization.

Opinion leaders in both state divisions of vocational and technical education exhibited demographic characteristics different from those usually associated with informal leaders. They were no older, no more experienced, had no more education, and belonged to no more groups than isolates.

Opinion leaders and isolates alike tended to be oriented to change. No differences in the extensiveness of communication nets were found between opinion leaders and isolates on profession-relevant information or general vocational and technical education information. Orientation to change was not related to communication

distance from the state director of vocational education in this study.

Sources of profession-relevant information were no more diverse than sources of work-relevant information in this study. This pattern of communication tended to place the director and his close associates in a gatekeeping role for activities pursued by supervisory staff.

OPINION LEADERS IN THE ORGANIZATIONAL STRUCTURE OF TWO STATE DIVISIONS OF VOCATIONAL AND TECHNICAL EDUCATION

Chapter I

BACKGROUND FOR THE STUDY

Introduction

In the decade of the seventies, state education departments loom sizably as stewards of the public trust in education. State education departments, by virtue of the power vested in them by state legislation, administer state and national funds to local education agencies throughout their states. Thus, they are in a position to influence or even control the quality and quantity of education available to youths and adults in local school districts. Whether the local school district is a shining example of an effective system or a liability to the education of the child depends in part on the influence of the state education department.

Political, economic, and social forces acting on a state education department can inhibit or expedite the improvement of educational systems. Kurland (1966) suggests that the regulatory function of state departments is not readily compatible with the leadership function. However, leadership capability within the state education department is a factor which can be developed; the recruitment of change-oriented people, the assignment of staff to appropriate positions, and the existence of an open system of communication foster a climate of innovation acceptance.

State education departments can be viewed as linking agents between local education agencies and federal agencies as allocators of resources according to federal priorities. The vocational and technical education divisions, as often as any other agency of government, have served this carrier function between national and local levels of education. As an instrumentality of both state and national government, the state education department must be streamlined for efficient and effective communication within the organization, and between the organization and other agencie This study examines the nature and extent of the communication system within the state division of vocational and technical education, compares the opinion leadership of individuals with the formal authority of their office, and relates each of these variables to orientation-to-change scores. The findings in this study can be used by state departments in developing policy, allocating their resources, and implementing procedures for program renewal.

Statement of the Problem

State education departments, like all agencies of government, are caught in the dilemma of planning for change while engaging in regulatory activities. On the one hand, state divisions of vocational and technical education regulate the flow of money to local education agencies for specific activities endorsed by this society; on the other hand, the state departments exert leadership for the improvement of existing conditions. This is the heart of the problem: how can state divisions of vocational and technical education act as a force for stability and continuity in education while adjusting courses and curricula for future demands on school graduates?

Many forces influencing the nature and extent of quality education are not susceptible to planned change in the short-run. These include the cultural influences of the community on the school, the proportion of the gross national product which can be devoted to the education of children, and the attitudes of existing school staff members.[1]

Therefore, it is useful to narrow the problem focus to factors which can be manipulated and controlled by education agencies in the relative short-run. One of the primary tactics employed by state education departments for program improvement is the organization of the departmental staff and resources for maximum impact on local education agencies. Structural relationships among staff strongly influence communication patterns and program operation. The orientation of the staff to change dictates their willingness as a group to accept new ideas. The locus of opinion leadership in the organization can be crucial to the smooth operation and effectiveness of the state education department. It is the interaction of these factors (orientation to change, formal authority, and communication patterns) and the judicious balance of regulatory power versus program innovation which make a state education department effective. Therefore, crucial interrelationships among opinion leaders, communication patterns, and orientation to change in state divisions of vocational and technical education formed the problem for study.

The Objective of the Study

The objective of this study was to examine opinion leadership within the framework of two state divisions of vocational and

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[1]The reader may argue with the ease of changing some of these factors. However, we are (1) assuming a programmatic change in the educational enterprise short of revolution, and (2) acknowledging the influence of factors beyond our control such as world wars, changes in national policy, etc.

technical education. The identification of opinion leaders in the divisions was associated with measures of formal authority and staff members' orientation to change. The variable of formal authority was aggregated from two measures: an individual's distance from the director, and membership in state division personnel groups. Combinations of these variables (opinion leadership, authority, and orientation to change) were tested for selected kinds of communication requests such as information on policy, profession-relevant information, information on speciality versus general vocational and technical education, and so forth. Eight hypotheses were constructed to test specific relationships among these variables.

1. Opinion leaders in state divisions of vocational and technical education occupy positions of greater formal authority within the organization than isolates.

2. These opinion leaders will have greater formal authority than isolates for information about what is new in the general field of vocational and technical education or for information about what is new in a particular speciality within the field of vocational and technical education.

3. Opinion leaders in state divisions of vocational and technical education are older, more experienced, have more years in education, and are members of more organizations than isolates.

4. Segments of the organization assigned specific administrative tasks maintain a closed communication system on matters of policy.

5. Profession-relevant information in vocational and technical education has a greater diversity in sources of information than work-relevant information.

6. Opinion leaders in state divisions of vocational and technical education are more likely to be oriented to change than isolates.

7. As the communication distance from the director increases, there is a corresponding decrease among respondent's orientation to change.

8. Orientation-to-change scores of respondents vary positively and proportionately with the extensiveness of the respondent's communication network.

Related Research

Speaking to an ESEA Title III audience, Clemens (1969) asserted the need for an "engineering" agency to translate existing knowledge into program improvement. He listed the state education department as potentially the most powerful single agency for planned change.

There are many ways in which state education agencies may diffuse products tailored for specific audiences. Ianni (1967) suggests demonstrations, bulletins, and conferences aimed at opinion leaders as activities worth pursuing.

It appears that this new leadership style being thrust on state education departments--fewer coercive rules and more informal influence--necessitates open communication within the division of vocational and technical education and a clear understanding of each person's role and function. The nature of authority vested in state department officials may change. Traditionally, authority has been associated with positions of power legitimized by legal institutions. Guest (1962) contrasts this "rational system model of organization" with the "natural system model" of authority which is based on expertise. In the latter system, authority is conferred by members of the group on persons who can best meet their needs.

In the authority of expertise, Benne (1970) suggests the relationship between the consultant and the client must be collaborative and in some way delimited. The outcome is independent of the will of the consultant. In the authority of rules, the outcome is dependent or "created" by the rules. The establishment of rules becomes the predominant strategy of control. However one chooses to perceive authority, its existence becomes crucial in the facilitation of planned change. Brickell (1961) suggests that the administrator may promote or prevent innovation. He is powerful because he has the authority to precipitate a decision.

Authority and Power. It may be useful to differentiate between authority and power. Singhvi (1969) points out that the terms should not be used interchangeably. He defines authority as the character of a communication in a formal organization which is accepted by members as governing their actions. Following this definition, it is possible to differentiate between informal authority and formal authority. Informal authority is akin to the expertise held by an individual who is sought after for advice. "Traditionally," opinion leaders are slightly older, more experienced, have more education, and more memberships in organizations than members of the group they lead (Hypothesis number 3). Formal authority resides in an office or position in an organization. Anyone holding such an office has the authority of that

office. An individual may exercise influence based on both formal and informal authority.

Power may be defined simply as "the ability to make things happen." Etzioni (1961) has identified three types of power: *coercive power* that uses threats of violence; *remunerative power* that relies on wages or fringe benefits; and *normative power* that is vested in cultural or group values. Some organizations have a power structure centered in one person; others have a small, tightly knit group making decisions; still others disperse the power to subunits of the organization. Etzioni points out that the nature of the organizational power structure tends to become congruent with the demands made on the organization. For example, penal institutions tend to use coercive methods to bring about order while universities utilize normative methods to instruct students. This study is designed to determine if persons with influence such as opinion leaders also occupy the positions of formal authority within the state division of vocational and technical education (Hypotheses numbers 1 and 2).

It is possible to have power without authority. An informal leader is an individual who has comparatively more power than authority. The reverse is possible. An individual may be promoted into an office on the basis of seniority when he lacks the ability to lead others. Singhvi (1969) concludes that in modern bureaucratic organizations, there is a growing imbalance between ability and authority. Management should promote those individuals who can use formal authority effectively. One would expect a state division of vocational and technical education to be organized in a relatively strong vertical fashion (with a limited span of control) with a relatively closed communication system on matters of policy (Hypothesis number 4).

A hierarchical organization needs employee loyalty in order to be effective. Litterer (1965) observed a reluctance on the part of subordinates to accept directives from superiors without question. Subordinates tend to think, "What will my people think if I do this?" Traditionally, vocational education state supervisors have felt responsible for working directly with local teachers. It may be difficult for such mid-management personnel to identify with the mission of the state agency rather than with representing local vocational education programs. This could cause them to look to informal leaders for advice rather than to the designated leaders in the organizational structure (Hypothesis number 1).

Perceived similarity of values undoubtedly affects subordinates' loyalty to a supervisor and an organization. Using a variety of measures of orientation to change, Lin (1966) found that those teachers who were more predisposed to accepting change were

those teachers who also thought their principals accepted change easily, considered the principal a good source of information, and felt personally close to the principal.

Bureaucratic Structure. How to create a state division of vocational and technical education which is responsive to the demands of its environment, yet maintains personnel loyalty without giant inefficiencies in decision-making--this is the question. Weinberg (1969) claims that bureaucracy is not necessarily a bar to educational change. After analyzing the operation of a large school system in the midwest, he concluded that modern bureaucracy is potentially of great value in facilitating educational change, but that political means must be used to redirect the loyalties and commitments of the bureaucracy.

Bureaucratic institutions such as state education departments are threatened by rapid, unexpected change. Bennis (1967) suggests organizations of the future must face several tasks: integration of the human element and the organization, power distribution, management of conflict, adaptation to a shifting social and economic environment, and revitalization to provide a "fearlessness of revision." When an organization is threatened from forces outside its boundaries, it is natural for the decision-making structure to become centralized. In Palumbo's study (1969) of role prescription specificity in fourteen local public health departments, he cautions that when an organization becomes more centralized and formalized, management styles become less participatory, morale decreases, and innovation and productivity are lower.

Perhaps it is true as Guest (1962) suggests, that the prerogatives of power come about not simply through official sanctions by the organizational structure, nor from consent by subordinates, but by a collaborative process of goal attainment. Individuals within an organization should feel a sense of autonomy and recognize their interdependence with other agencies of the organization. For example, this interdependence manifests itself in the realm of policy. Subparts of the organization must not make policy decisions on an ad hoc basis. Staff should look to central policymakers for guidelines (Hypothesis number 4).

This interdependence with other units of organization should extend beyond system boundaries. A study of sixteen social welfare and health organizations by Aiken and Hage (1968) found that organizations with many joint programs tend to be more complex, more innovative, and have more active internal communication channels, and somewhat more decentralized decision-making structures. They hypothesized that the increase in division of labor was partially responsible for the complexity and innovativeness.

According to Brewer (1971), upward communication in an organization can be achieved with narrow spans of control. This is

also likely to result in more vertical communication downward. High differentiation of superior and subordinate roles also increases vertical communication. In some organizations, low differentiations result in undesirable effects: a threat to hierarchical control, and closed channels of social mobility in the organization. For communication to occur at all, communicators must share common ground. Wide spans of control and wide status differentiations reduce vertical communication. Communication with subordinates will be seen as irrelevant and potentially disruptive.

An effective organization structure, then, would facilitate vertical communication by differentiating roles into somewhat specialized positions which are interdependent upon each other. A relatively narrow span of control would be maintained. Open channels of internal communications can do much to offset the problem of specialized role functions in a bureaucratic organization.

Communication Patterns. Many factors influence the internal structure of an organization: size, the nature of the tasks it performs, stability and homogeneity of the environment. As organizations become more complex and internal structures more diverse, the volume of communication increases. Hage and others (1971) found in a study of sixteen social welfare and rehabilitation organizations that horizontal communication flowed between people on the same status level in different departments. This was particularly true of unscheduled communication. Their findings also suggest less need for programmed communication to achieve the necessary linkages between parts of the organization when organizations are more diversified and specialized. Coordination in these differentiated organizations tended to rely more on a system of reciprocal information flow.

Patterns of interrelationships among staff members in school systems can either facilitate or impede communication. Lippitt and others (1967) studied the spread of innovations among teachers in a sample of elementary and secondary classrooms. Teachers innovated and shared more information in schools where the communication structure was more diffuse and where almost everyone was linked to someone. Lin (1968), in a study of three Michigan high schools, found the most innovative high school had (1) no teachers who were isolated from the communication network, (2) no minor cliques separated from the network, and (3) opinion leaders whose influence domains covered nearly 90 percent of all teachers in the school. Lin recommends that high prestige opinion leaders be invited to participate in and support the use of innovations in a school. He warns that when the informal and formal authority structures in an educational system are incompatible, conflict and failure may result if innovations are disseminated through the formal structure.

Opinion leaders, by definition, represent the norms of the system and influence the actions of others. They are central to the informal communication structure of the organization. According to Rogers and Shoemaker (1971), opinion leaders frequently are perceived as competent by their followers. Such competence may take the form of higher status, greater innovativeness, or more exposure to mass media communication channels. When opinion leader-follower communication interactions were classified into adopter categories, only 19 percent of the dyadic choices were to less innovative leaders. Being the central focus for informal communication results in greater satisfaction by individuals with their organizational positions. Guetzkow and Simon (1955) found that organizational members' morale is related to their centrality in the communication networks. More extensive connections in communications are related to higher levels of member satisfaction.

Individuals occupying positions of authority in industrial organizations had more formal and informal communication contacts than other members of the organization according to a study conducted by Zajonc and Wolfe (1963). Also, the contacts were greater for staff positions than for line positions in the organizations. Leavitt (1952) has conducted research which indicates that the number of messages and individual satisfaction vary according to the position a member occupies in the communication structure of the organization (Hypothesis number 7). Members of "circle" networks were more satisfied with their jobs than members of "Y" networks. It is reasonable to assume that the more centrally an individual is located in an information network, and the more satisfied he is toward his job, the more open and receptive he will be toward change and innovation (Hypotheses numbers 6 and 8).

However, an individual's general orientation to change is different from the acceptance of a specific innovation. Lin (1966) concluded in his study of three Michigan high schools that change orientation is a distinct concept from innovation internalization. In this study, age and dogmatism, among other variables, were negatively associated with change orientation. Twelve of the variables significantly correlated with change orientation in the Lin study were related to the institution.

Few studies of communication and opinion leadership have been completed in vocational and technical education. A study by Blanton and others (1971) among teachers of vocational agriculture found opinion leadership nominations to be associated with the accessibility of the opinion leader. The opinion leader's willingness to discuss the specific problem, his availability, and his competency as judged by the performance of his students were facts contributing to his nomination as an opinion leader. Within the local school setting, Bice (1970) found that two-thirds of the nominations for a vocational agriculture teacher as an opinion

leader were from other vocational teachers. Each of these studies tended to confirm traditional characteristics of opinion leaders related to age, experience, education, and members[illegible]rga zations (Hypothesis number 3).

At the state level, Blanton (1970) concluded that communication patterns within a state division of vocational and technical education tended to be confined to subunits (service area or functional area) of the organization. Communication between the higher hierarchical level and the lowest levels of the organization tended to be channeled through intermediate units. Except for communication between staff units of the division (guidance or planning) and the line subunits, very little communication took place between state supervisors and state-level subunits of the organization. This condition suggests that supervisors in state divisions of vocational and technical education may tend to seek profession-relevant information from more diverse sources than work-relevant information (Hypothesis number 5).

Chapter II

METHODOLOGY OF THE STUDY

Design and Conduct of the Study

This study of opinion leadership in two state divisions of vocational and technical education focused on influence patterns of staff members in the organization. Relationships among formal authority, communication patterns (dyads, triads and chains), opinion leadership, and orientation to change were examined. The precision necessary for an effective study of these variables limited the scope of this study to two state divisions of vocational education.

The researchers traveled to the state divisions to collect the data for the study. Structured responses were used in the questionnaire. Interviews were held informally with individual staff members or with groups of staff members. In both states, the state directors verbally endorsed the study and encouraged staff members to respond freely to the questions. It was decided to maintain anonymity of responses in this study, including the names of the cooperating state divisions. This posture encouraged complete and honest reporting of the data. The states were located in different geographic regions of the country.

The one-shot status study included hypotheses of critical relationships among major variables. Division #1 staff members were interviewed in September 1969; the visit to division #2 was conducted in May 1970. Each organization was studied within its respective context. Thus, no true controls were possible. Procedures for contacting the state divisions and administration of the data collection instruments were identical. The immediate circumstances of the data collection environment undoubtedly influenced the data. For example, the staff in state division #2 completed the questionnaires after a staff meeting in the state office building; the other staff completed the questionnaires in a state park lodge building just before a picnic.

All staff members who were present for each of the staff meetings completed the questionnaires. Due to schedule conflicts and other reasons, some respondents were absent. In state division #2, nine questionnaires were completed by mail bringing the total returns to forty-five from that state. The trade and industrial field supervisors did not receive questionnaires and were

not a part of the study. However, four other field supervisors were present during the staff meeting and completed the questionnaires. These field supervisors were located in various parts of the state; their responses were used, but were not considered essential to the data collected in this study. No vacancies were noted on this staff, although some individuals had been appointed recently.

State division #1 had staff positions for fifty-six individuals. However, six of these positions were vacant. These vacancies included an associate director for local programs and an associate director for administrative services, two very important positions. One of the other associate directors was relatively new in his position. Five persons in this division did not receive questionnaires because of absence from the meeting. However, these persons were widely scattered throughout the organization and none were in key leadership positions. Three of the forty-five questionnaires were returned by mail.

Selection of the Sample

It seemed highly likely that the character of the communication flow within the state divisions would be responsive to state structure within the state department of education. However, it was not possible to control many of these variables with a sample of two state departments. Therefore, the organizations studied should be perceived as typical of a given structure among medium-sized state divisions of vocational and technical education.

Four factors were used to select the departments for study: (1) the method used to select the state board of education and the state superintendent of education (elected versus appointed); (2) the organizational level of vocational-technical education within the state department of education; (3) the number of secondary vocational students in that state and the ratio of total secondary students to vocational students; and (4) the number of state staff members in the vocational-education division.

Both state divisions studied were located in state departments of education; the state director of vocational education in each state reported to the superintendent of education. In division #1, the state board of education is appointed by the governor with the state superintendent of education elected. In division #2, the state superintendent of education is appointed by the state board of education which is appointed by the governor. An elected versus an appointed state superintendent of education may have an influence on the communication activities of the vocational-technical education staff. However, no attempt was made to isolate the effects of this variable. Both states studied had medium-sized

enrollments of vocational students with a ratio of one vocational student for every ten secondary school students.[2]

Instrumentation

The measurement of opinion leadership, formal authority, and orientation to change in a highly structured organization such as a state division of vocational-technical education requires a sensitivity to informal relationships and staff perceptions. The questionnaire items were straightforward and direct; they depended on the respondent's willingness to answer questions openly. See Appendix B for a copy of the questionnaire. During informal conversations with the staff after the administration of the questionnaire, the investigators were able to assess the quality and tone of the remarks. More structured interviews were held with the state director and immediate members of his staff.

The questionnaire was pilot tested in April 1967 with staff members in the Vocational-Technical Division of the Vermont Department of Education. Slight changes were made in some Section II items. Section IV of the questionnaire was added as a result of this pilot test.

The items for Sections II and III in the questionnaire used in division #1 were patterned after a study completed by Lin (1966). He examined the structural relationships of communications in three Michigan high schools. The measurement of orientation to change, in Section II of the questionnaire, was changed after the first administration of the instrument in division #1. The decision to substitute a new set of items for the change-orientation score was based on the inability of the previous items to discriminate among respondents. Appendix Table A-2 compares three kinds of perceptions to change orientation with organizational levels. All variances within the table cells were homogeneous with the exception of the .66 variance.

The second version of Section II consisted of twenty items constructed by the Thurstone method of equal-appearing intervals. Members of The Center for Vocational and Technical Education staff wrote and rated 130 items along a seven-interval continuum of the favorableness-unfavorableness of each statement toward change in vocational education. Thirty usable sets of ratings were received from the staff. A Q value representing the interquartile range

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[2]These demographic factors provide some indication of the amount of vocational education in the state. This information was gleaned primarily from Swanson (1967) and supplemented by data from Will (1964) and Simon and Grant (1966).

was computed for each item to eliminate ambiguous items. Only items with a Q value of 1.6 or less were considered for use in the final instrument. Items near the extreme ends of the scale are emotion-laden and represent more extreme attitudes. Items near the center of the scale represent more intermediate attitudes and are subject to broader interpretation than statements near the extremes. Statements selected used Q values ranging from 0.6 for the extreme 1.1 scale value item to 1.6 for the item with a scale value of 3.0. See Appendix C for the scale value and Q value for each item on the scale.

Section III of the instrument remained the same during both administrations. These questions asked respondents to identify their sources of information and advice for various kinds of activities. Respondents also were asked for nominations of "most knowledgeable" individuals. Responses to these questions were analyzed using the sociometric technique to determine the opinion leaders in the organization. Respondents were encouraged to name more than one person for each question in Section III. All names were used in computing the integration score (number of people nominating an individual) and the relative integration score (number of links in a communication cluster) for each question.

Section IV of the instrument was added after the pilot test in order to identify specific examples of innovations and linkages which exist in state divisions of vocational and technical education.

The organizational charts in each organization were used to determine an authority score for each respondent. Authority was determined by multiplying an individual's membership in an organizational group (Group 1, director and associate directors; Group 2, state supervisors of local programs; Group 3, assistant state supervisors of local programs, and; Group 4, state planners and coordinators)[3] by his communication distance from the director (1 for the director and his associates; 2 for the head state supervisors; 3 for most assistant state supervisors, and; 4 for field instructors).[4] The state planners and coordinators presented a problem for classification since they seemed to serve more of a staff than a line function to local educational agencies. Therefore, they were classified with a "4" group score. It could be argued that they had more authority than the "4" group score indicates.

[3]In the analyses for some hypotheses, a fifth organizational group was identified composed of supervisors and assistant supervisors who were responsible for special services, area schools, and post-secondary schools.

[4]The vacancy for the associate director in division #1 allowed the state supervisors for local programs to be one person closer to the director than ordinarily would be expected.

Analysis Techniques

Selection of Opinion Leaders. Section III of the instrument was used to assess opinion leadership in each of the state divisions. Six questions (numbers 1, 4, 5, 7, 8, and 9) were identified by the research team as representing relatively discrete spheres of influence: daily work, general activities, speciality activities, and policy information. An equal number of the questions referred to the "most knowledgeable" individuals, as opposed to individuals actually sought after for information. The differential effect of the wording on the respondent identification of opinion leaders was not known, therefore it was balanced in the six questions. A computer program computed the most frequent nominations for opinion leaders based on all responses to these six questions. Each respondent had an opportunity to list three names to each of the six questions. Each respondent had an equal opportunity to be nominated as an opinion leader by all other respondents. See Appendix Table A-1 for the number of nominations received by opinion leaders in each state division. A minimum of five nominations was required to identify an individual as an opinion leader.

The thirteen isolates in division #1 received no nominations to the six questions. All thirteen were used in the comparison with opinion leader characteristics. Fourteen isolates in division #2 were randomly selected from twenty-nine individuals receiving no nominations to the six questions.

Sociometric Analysis. The sociometric scores for each individual were computed on selected groups of questions in the instrument.[5] An individual's sociometric score increased as he was nominated as an opinion leader by more people. Two sociometric scores were computed for use in this study: the integration score and the relative integration score. The integration score is a frequency count of the number of people affected by direct and indirect communication. It includes all the people affected by a communication chain, dyad, or triad. The second score, relative integration, is the number of communication links in a chain divided by N-1 where N = the number of people in the chain. It indicates the position of an individual in relation to those with whom he is directly or indirectly connected. The relative integration score provides an indication of the shape of the communication pattern.

The direction of the links from chooser to chosen does make a difference in the way the number of links are computed. A dyad

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[5]The computer program for this analysis was developed by Nan Lin and later revised by Lytton L. Guimaraes in the Department of Communication at Michigan State University.

or triad relationship exists only when the links are going in the same direction. For example, in Illustration C, a didactic relationship characterizes the communication between Respondent 60 and Respondent 65. This is also true of Respondent 15 and Respondent 65. These two didactic chains of two links each may be added to the six primary links for a total of ten links for Respondent 65. A didactic relationship is one in which a respondent's influence is conveyed to an individual via a third party. The relative integration score for Respondent 65 on this question is 10 ÷ 4 = 2.5. In this case, Respondent 69 serves a gatekeeping function.

The question of linkage in a communication cluster is important because it indicates the extent of the communication system. The linkage numbers vary depending on the location of the chosen individual. For example, Illustration B shows Respondent 64 to be in a central or gatekeeping position. This cuts down on the number of links needed for the communications system. In Illustration B, the total number of links is three, going from 48 to 64 to 23, which counts as two; it only takes one link to go from 64 in either direction. Therefore, the total system requires only three links. Illustration A shows Respondent 62 on one end of the continuum. Therefore, the communication cluster requires four links. This is an important consideration because the presence of gatekeepers can reduce the number of direct links among individuals.

The numbers of links do not influence the integration score, but figure into the computation of the relative integration score. Relative integration measures access to the system through both direct and indirect communicators. Usually it can be assumed that the greater the number of links, the more open the communications system.

The concept of centrality of communications can be studied by observing the direction and number of communication links among members of a social system. Lin (1968) discusses the group structure of communications in three Michigan high schools. His discussions of teacher centrality of communications is similar to the concept of relative integration. The influence domain of the teachers corresponds with the integration score in this report. Researchers such as Rogers (1962) and Becker (1970) have discussed the relationship of centrality to innovation adoption behavior. Ordinarily, laggards are outside of the communications domains of opinion leaders.

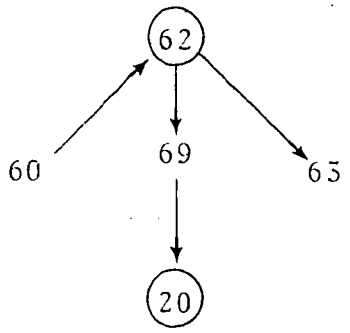
Limitations of the Study

1. The computer program, designed to summarize (1) the number of individuals nominated as "sources of information" or "most knowledgeable," and (2) the number of links in a communication cluster, functions optimally with frequencies much higher than

Figure 1

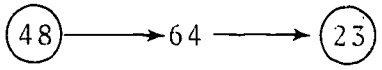
ILLUSTRATIONS OF LINKAGE ANALYSIS

Illustration A



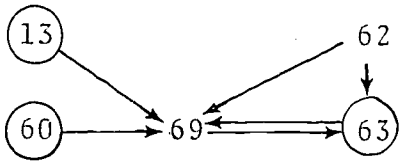
2 + 4 = 6 links for 62

Illustration B



2 + 1 = 3 links for 64

Illustration C



2 + 2 + 6 = 10 links for 63

0 ⟶ 0 direct link

0 ⟶ 0 ⟶ 0 didactic relationships

those available in this study. It is conceivable that the results could be slightly altered if more nominations per person were obtained.

2. When individuals who were outside the state division were identified as "most knowledgeable" or as a "source of information," it was impossible to obtain their input to the analysis. Thus, on those hypotheses using the relative integration score as the dependent variable (Hypotheses numbers 4, 5, and 8), the results are somewhat incomplete.

3. Analyses of the data on relative integration score (communication cluster linkage) have been applied as a measure of system openness. It is recognized that many other variables influence system openness.

4. The instrument was administered to each division staff as a group. This may have inhibited comments which could have been elicited under more confidential circumstances. However, opportunity for individual remarks was available after the data were collected.

Chapter III

PRESENTATION AND INTERPRETATION OF FINDINGS

Opinion Leadership

Three hypotheses were developed to test the authority role and characteristics of opinion leaders.

1. Opinion leaders in state divisions of vocational and technical education occupy positions of greater formal authority within the organization than isolates.

2. These opinion leaders will have greater formal authority than isolates for information about what is new in the general field of vocational and technical education or for information about what is new in a particular speciality within the field of vocational and technical education.

3. Opinion leaders in state divisions of vocational and technical education are older, more experienced, have more years in education, and are members of more organizations than isolates.

Historically, opinion leadership has been studied as interpersonal communication which occurs in informal, unstructured small groups. This study gathered sociometric data on opinion leaders within the context of a formal organization. It should not be a surprise, therefore, to note findings different from the traditional literature on this topic. Opinion leaders in this study occupied positions of authority within the organization. The individuals nominated as opinion leaders were either directors, associate directors and/or head state supervisors in each of the two states studied. The only exception to this generalization was a field supervisor in division #2 who had recently been promoted to an assistant supervisor. Appendix Table A-1 notes how quickly the number of nominations for opinion leaders decrease after the top six to eight names have been identified. The limited number of nominations and their concentration on the directors, associate directors, and head state supervisors reduced the information which could be collected on communication behavior of assistant state supervisors.

The informal communications network tended to be compatible with the formal communications structure imposed by the organization of roles and responsibilities within each of the two divisions. Assistant supervisors tended to communicate informally with members of their own subunits of the organizations. Staff nominations for opinion leaders tended to be for the supervisors or associate directors representing them to the directors. In general, the hierarchical chain of command was followed in relation to complaints and assignments.

An authority score was computed[6] and co-related with the number of opinion leader nominations for each of the forty-five individuals in each of the state divisions. Table 1 shows significant correlations for opinion leadership and authority for each of the two states. Due to the conversion of the authority scores into rank order, the correlation coefficients carry a positive sign. Findings from data collected for the second hypothesis corroborated results from the first: individuals nominated as sources of information for general vocational and technical education had higher authority scores than individuals in the divisions who were not nominated. This finding was true for both state divisions studied and for information specific to an individual's speciality within vocational and technical education. See Tables 2 and 3.

Opinion leadership within these state divisions appeared to be rather consistent regardless of the specificity of the information. State staff members looked to the same leaders for information and advice. This implies a gatekeeping role for directors and head state supervisors of state divisions of vocational and technical education. Anyone attempting to implement an innovation within the division would need their tacit, if not expressed, endorsement of the planned change for successful implementation.

The personal characteristics usually ascribed to opinion leaders were not found in this study. Opinion leaders were not consistently older, were not members of more groups, and did not have consistently more years of education than isolates. In fact, Tables 4 and 5 show the opinion leaders to hold fewer memberships in groups. The greatest characteristic difference between opinion leaders and isolates was in years of experience in the state division. Opinion leaders had 3.0 and 6.4 more years of experience for divisions 1 and 2 respectively. These results suggest that opinion leaders became staff members in these divisions at an earlier age than isolates.

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[6] See the Glossary for an explanation.

Table 1

RANK ORDER CORRELATION[1] OF OPINION LEADERSHIP WITH AUTHORITY SCORE AND ORIENTATION-TO-CHANGE SCORE

Variables	Opinion Leadership	
	Correlation	t Value[2]
Authority Score		
Division #1	.557	6.57
Division #2	.448	5.28
Orientation-to-Change Score		
Division #1	.068	0.45
Division #2	.220	1.48

[1]Computed as a Spearman rank correlation coefficient with the correction for tied observations.

6.57 and 5.28 $>$ 2.42 at the .01 level with 45 d.f.

[2]When N $>$ 10, the value is distributed as student's t. See Siegel, p. 212.

Several alternative hypotheses may be advanced to explain why opinion leaders in these organizations did not differ from isolates on many of the characteristics studied. Advancement in rank and promotion within the department may be based on experience which engenders loyalty and trust rather than on formal education. Involvement with social or professional organizations outside the state division may not be as important as exhibiting leadership within the state division. Age, as a sign of leadership, may be discounted in favor of demonstrated performance. These results indicate that the exercise of opinion leadership within a state division of vocational and technical education follows authority lines. For example, only rarely do state supervisors or assistant state supervisors go to coffee with the director or associate directors. Thus, there is little opportunity for subordinates who are removed more than one person from the director to exercise much interpersonal influence on him.[7]

[7]While these data indicate opinion leadership functioned strictly according to the formal organizational chart, one division

Table 2

AUTHORITY SCORES BY SOURCES OF INFORMATION NOMINATORS FOR GENERAL AND SPECIFIC INFORMATION, DIVISION #1

Type of Information	Authority Score[1] for Individuals: Nominated as Information Sources Mean Score	Mean Difference	Not nominated as Information Source Mean Score	t Value
	(N = 16[2])		(N = 29)	
General	6.5	5.1	9.4	5.10
Specific	6.6	2.7	9.5	5.40

[1]Authority score is determined by a combination of values including communication distance from the director and occupational positions. Low scores indicate greater authority. See the Glossary.

[2]The group size happened to be the same for both types of information (an accident since six people changed groups).

5.1 and 5.4 > 2.52 at the .01 level with 21 d.f.

Communication Patterns

Two hypotheses were stated regarding the shape of the communication patterns within the organization.

4. Segments of the organization assigned specific administrative tasks maintain a closed communication system on matters of policy.

5. Profession-relevant information in vocational and technical education has a greater diversity in sources of information than work-relevant information.

was considering the advisability of reorganizing its staff to achieve more unified supervision of vocational and technical education. Privately, individual staff members expressed some concern about reorganization plans. In Section 4 of the questionnaire, several of the staff from this division indicated innovations involving reorganization of the division.

Table 5

AUTHORITY SCORES BY SOURCES OF INFORMATION NOMINATORS FOR GENERAL AND SPECIFIC INFORMATION, DIVISION #2

Types of Information	Authority Score[1] for Individuals: Nominated as Information Sources Mean Score	Mean Difference	Not nominated as Information Source Mean Score	t Value
General	5.5 (N = 10)	6.3	11.8 (N = 35)	4.45
Specific	6.06 (N = 17)	6.15	12.21 (N = 28)	3.60

[1]Authority score is determined by a combination of values including communication distance from the director and occupational positions. Low scores indicate greater authority. See the Glossary.

4.45 and 3.6 $>$ 2.52 at the .01 level with 21 d.f.

Most bureaucratic organizations may be expected to maintain a relatively closed communication system on matters of policy; this would be particularly true when subdivisions of the organization are competing for scarce resources. Tables 6 and 7 show the number of communication links per person in each intraorganizational group. Since the number of communication links in the integration score is influenced by the direction of the communication and the shape of the communications cluster, the mean number of links per person is a rough estimate of system openness.

The director and his associates were regarded as the most knowledgeable about the policies of the organization. This finding was significant at the .01 level in each of the organizations. The results in Tables 6 and 7 show that perceived influence on matters of policy was not shared with many members of other groups. These tables show a proportionate increase in authority on matters of policy by subunits of the organization. With few exceptions, most staff members looked to the director and those near him for policy direction. These findings tend to deny the existence of closed communication clusters on matters of policy in subgroups of the organization.

Table 4

DEMOGRAPHIC DATA ON OPINION
LEADERS AND ISOLATES MEAN VALUES, DIVISION #1

Characteristics	Opinion Leaders (N = 6)	Isolates (N = 15)	Mean Difference	t Value
Age (yrs.)	46.3	45.1	1.2	.27
Experience (yrs.)	11.5	8.5	3.0	.70
Education (yrs.)	18.0	18.4	.4	.55
Organization (No.)				
Social and Economic	2.3	2.5	.2	.28
Professional	5.6	6.3	.7	.70

With 9 d.f. all t values $<$ 1.83 required for significance at the .05 level.

Change process research consistently shows innovators and most opinion leaders to be individuals who maintain memberships and contacts with diverse groups of people. Therefore, it was of interest to determine if state staff members tend to seek information on vocational education from people who are located in organizations other than the state division of vocational and technical education. Table 8 shows that approximately half of the individuals named as first-choice sources of information for general topics in vocational and technical education were not members of the state department. The data for divisions #1 and #2 are very similar for the four questions in Section III which were summarized. Division #1 staff members tended to identify outside-the-division opinion leaders less frequently than division #2 personnel. Division #2 had more joint appointments with other agencies in the department than division #1.

A diversity of sources of information within the state divisions was not demonstrated in data reported in Tables 9 and 10. The director, his associates, and the head state supervisors were perceived as authoritative sources of information for both profession-relevant and work-relevant communication. No significant differences existed between these kinds of information in either

Table 5

DEMOGRAPHIC DATA ON OPINION LEADERS AND ISOLATES MEAN VALUES, DIVISION #2

Characteristics	Opinion Leaders (N = 8)	Isolates[1] (N = 14)	Mean Difference	t Value
Age (yrs.)	46.8	48.5	1.7	0.37
Experience (yrs.)	12.8	6.4	6.4	1.84
Education (yrs.)	17.8	16.9	.9	1.74
Organization (No.)				
Social and Economic	2.4	3.0	.6	0.77
Professional	3.3	3.9	.6	2.39

[1]These fourteen isolates were randomly selected from a group of twenty-nine isolates who received no nominations to be items on reaction of the questionnaire.

With 10 d.f., 2.39 $>$1.81 required for significance at the .05 level.

state division. Once again, differences among the intraorganizational groups are confirmed in Appendix Tables A-5 and A-6. However, no support is provided for extensive profession-relevant information seeking behavior within the state division. However, no responses were obtained from opinion leaders outside the organization. These opinion leader communication patterns could affect the relative integration scores. The data collected imply that the same individuals who make policy decisions within the organization are gatekeepers for both work-relevant and profession-relevant behavior. The finding also supports the generalization that individuals tend to use information sources which are most convenient to them.

Orientation to Change

An individual's willingness to accept new ideas and his perceptions associated with change affect his ability to lead others.

Table 6

NOMINATIONS RECEIVED BY MEMBERS OF INTRAORGANIZATIONAL GROUPS ON ORGANIZATIONAL POLICY, DIVISION #1

Group Members	N	Relative Integration Scores	Mean Communication Links Per Person
Director and Associate Directors	4	4.14	1.04
State Supervisors of Local Programs	7	1.02	.15
Assistant State Supervisors of Local Programs	19	0.25	.01
State Planners	5	0.07	.01
Area Schools and Post-Secondary Schools Supervisors	10	0.39	.04

See Appendix Table A-3 for test of significance.

Three hypotheses were developed to test relationships between orientation to change and other variables.

6. Opinion leaders in state divisions of vocational and technical education are more likely to be oriented to change than isolates.

7. As the communication distance from the director increases, there is a corresponding decrease among respondent's orientation to change.

8. Orientation-to-change scores of respondents vary positively and proportionately with the extensiveness of the respondent's communication network.

As noted in Chapter II, results of orientation-to-change scores failed to discriminate among respondents at different levels in the organizational structure. This occurred despite a complete revision in the orientation-to-change items after the administration of the instrument in division #1. Appendix Table A-2 shows

Table 7

NOMINATIONS RECEIVED BY MEMBERS OF INTRAORGANIZATIONAL GROUPS ON ORGANIZATIONAL POLICY, DIVISION #2

Group Members	N	Relative Integration Scores	Mean Communication Links Per Person
Director and Associate Directors	5	4.09	.82
State Supervisors of Local Programs	6	.14	.02
Assistant State Supervisors of Local Programs	10	.07	.01
State Planners and Coordinators	11	.25	.02
Special Services and Programs Supervisors	13	.00	.00

See Appendix Table A-4 for test of significance.

respondents to have uniformly high self-perceptions of their orientation to change. The division #1 subgroups differed very slightly in their perceived change orientation of self, supervisor, and others. Orientation-to-change scores from state division #2 appeared to have very little relationship with the variables tested. The correlation coefficients in Table 11 comparing orientation to change with communication distance are very low for both divisions. Table 12 data shows no relationship between orientation to change and the configuration of a respondent's communication cluster for sources of information covering the general field of vocational and technical education and for sources of information covering professional activities. A respondent's communication network associated with general topics and professional activities is most likely to reflect his orientation-to-change outlook.

Table 8

PROPORTION OF FIRST CHOICE NOMINATIONS OF OUTSIDE-THE-DIVISIONS OPINION LEADERS FOR GENERAL AND SPECIFIC INFORMATION

Types of Information	Mode of Nomination: Actual Source of Information	Mode of Nomination: Most Knowledgeable Person
General Information		
Division #1	.50	.41
Division #2	.48	.31
Specific Information		
Division #1	.18	.24
Division #2	.34	.10

Table 9

NOMINATIONS RECEIVED BY MEMBERS OF INTRAORGANIZATIONAL GROUPS FOR PROFESSION-RELEVANT AND WORK-RELEVANT INFORMATION, DIVISION #1

Group	N	Relative Integration Scores: Prof. Relevant	Relative Integration Scores: Work Relevant	Mean Communication Links Per Person: Prof. Relevant	Mean Communication Links Per Person: Work Relevant
Director and Associate Director	4	2.00	1.95	0.50	0.49
State Supervisors of Local Programs	7	1.55	1.61	0.22	0.23
Assistant State Supervisors of Local Programs	19	0.00	0.16	0.00	0.01
State Planners	5	0.07	0.00	0.01	0.00
Area Schools and Post-Secondary Schools Supervisors	10	0.07	0.34	0.01	0.03

Table 10

NOMINATIONS RECEIVED BY MEMBERS OF INTRAORGANIZATIONAL GROUPS FOR PROFESSION-RELEVANT AND WORK-RELEVANT INFORMATION, DIVISION #2

Group	N	Relative Integration Scores		Mean Communication Links Per Person	
		Prof. Relevant	Work Relevant	Prof. Relevant	Work Relevant
Director and Associate Directors	5	2.18	2.86	0.44	0.57
State Supervisors of Local Programs	6	0.14	0.39	0.02	0.06
Assistant State Supervisors of Local Programs	10	0.07	0.41	0.01	0.04
State Planners and Coordinators	11	0.00	0.00	0.00	0.00
Special Services and Programs Supervisors	13	0.00	0.00	0.00	0.00

Table 11

SPEARMAN RANK ORDER CORRELATION OF COMMUNICATION DISTANCE FROM THE DIRECTOR AND ORIENTATION-TO-CHANGE SCORE

Divisions	Correlation	t Value
#1	0.073	0.480
#2	-0.161	-1.067

Both t values were $<$ 1.68 required at the .05 level.

See Siegel, p. 212.

Table 12

PEARSON PRODUCT-MOMENT CORRELATION OF ORIENTATION-TO-CHANGE SCORES AND RELATIVE INTEGRATION SCORE

Divisions	Correlation	F Value of Regression Coefficient
#1	.116	.58
#2	.080	.28

Both F values were $<$ 4.07 required at the .05 level.

See Appendix Tables A-8 and A-9 for tests of significance.

Chapter IV

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The following conclusions are subject to the limitations of a sample of two state divisions of vocational and technical education out of the population of fifty states. All persons present at the meeting returned usable questionnaires. These data represent 100 percent of the potential respondents in division #2 and 90 percent of the potential respondents in division #1.

Conclusions

1. Opinion leaders in state divisions of vocational and technical education occupy positions of greater formal authority than isolates.

Opinion leadership correlated ($r = .557$ and $.448$) with authority significant at the .01 level for both divisions. The null hypothesis was rejected. With one exception, all opinion leaders named by members of the organization were either state directors, associate directors, or head state supervisors.

2. Individuals perceived as opinion leaders occupied positions of formal authority for information requests about vocational and technical education regardless of the speciality of the request.

When opinion leaders' authority scores were compared with isolates' authority scores, the difference ($t = 3.10$ and 4.45 for general information and $t = 5.40$ and 3.60 for specific information) were significant at the .01 level for both divisions. The null hypothesis was rejected.

3. Opinion leaders in state divisions of vocational and technical education are no older, no more experienced, have no more years in education, and are members of no more organizations than isolates.

Opinion leaders were no older ($t = .27$ and $.37$), had no more education ($t = .55$ and 1.74), had no more experience ($t = .70$ and 1.84), and belonged to no more groups ($t = .28, .70, .77$ and 2.39) than isolates. In fact, many of the comparisons were in favor of the isolates. All comparisons except one were nonsignificant at

the .05 level for both divisions. The null hypothesis was not rejected.

4. Segments of the organizations did not maintain closed communication on matters of policy.

Opinion leaders nominated as most knowledgeable about matters of policy were selected almost exclusively (F = 22.20 and 6.00) from the director and associate directors in each organization. The null hypothesis was rejected at the .01 level. Assistant state supervisors, state planners, and even state supervisors received very few nominations as opinion leaders on matters of policy. This means the subgroups within the organization were willing to look to the formal leadership of the state division of vocational and technical education on matters of policy indicating a congruency between the informal and formal authority structure.

5. Sources of information for profession-relevant information were no more diverse than sources of information for work-relevant information.

After partitioning variance accounted for by each subunit in the organization, the differences (F = .06 and 1.19) which could be associated with the shape of the communications clusters for profession-relevant and work-relevant information were nonsignificant at the .05 level for both divisions. The null hypothesis was not rejected. This conclusion disregards the sources of information identified outside of the state division. In general, diversity of information tended to be an elusive variable due to the limited number of opinion leaders nominated at the assistant supervisor level.

6. Opinion leaders and isolates alike tended to be highly oriented to change.

Opinion leaders scored slightly higher on the orientation-to-change instrument, but the correlations (r = .068 and .220) were not significant at the .01 level. The null hypothesis was not rejected. Thus, opinion leadership was not related to orientation to change.

7. No relationship existed between the orientation to change of individuals and the communication distance between the director and them.

The hypothesized relationship of decreased orientation to change with increased distance between the respondent and the director was not supported (r = .073 and -.161) in either division. The null hypothesis was not rejected.

8. No relationship existed between the orientation to change of individuals and the extensiveness of their communication

network for general vocational and technical education information or for profession-relevant information.

The hypothesized linear relationship between orientation to change and the shape of the communications clusters did not exist. The correlations ($r = .116$ and $.080$) were not significant at the .05 level. The null hypothesis was not rejected.

Implications

1. Change agents need to obtain the endorsement of leaders of state divisions of vocational and technical education before advocating substantive changes in the states. In situations similar to the two cases studied, opinion leaders in the formal authority structure constitute one of the most important means of legitimizing innovations.

2. The state director and staff members close to him set policy for the division. They are likely to have the most complete information of any unit in the organization. Also, they are likely to be aware of power relationships with groups outside the division. A prime example of a sensitive relationship would be liaison with the state legislature.

3. In a hierarchical organization such as a state division of vocational and technical education, characteristics such as loyalty and competency are more important for leaders than formal degrees, or participation in social or community organizations.

4. When hiring or promoting state staff members to leadership positions, a state director of vocational education need not attend to the usual characteristics of opinion leaders. Apparently, the authority associated with the leadership positions within the organization is sufficient to cause subordinates to go to whoever holds those positions for advice on a wide variety of issues.

5. This study suggests that sources of information for profession-relevant questions are no different than sources of information for work-relevant questions. Apparently, employees in state divisions of vocational and technical education seek information from persons in positions of formal authority within the organization regardless of the nature of the question.

Recommendations

The following recommendations are based on data from two state divisions of vocational and technical education.

1. Other complex organizations should be studied to verify opinion leader characteristics which deviate from traditional norms. In organizations where the informal power structure is not congruent with formal authority roles, opinion leaders may exhibit more normative characteristics. Also, organizations which are concerned with different technological processes (other than the administration of government funds) may contain opinion leaders with different demographic characteristics.

2. Managers of state divisions of vocational and technical education should place those persons who are trustworthy and competent in leadership positions.

3. A study of teacher education agencies in institutions of higher education should be conducted to determine if opinion leaders function in a manner similar to opinion leaders within state divisions of vocational and technical education. A knowledge of the similarities and differences between these organizations could lead to more effective cooperation between the agencies.

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GLOSSARY

Authority -- the character of a communication in a formal organization which is accepted by members as governing their actions. Formal authority resides in an organization; informal authority is akin to opinion leadership.

Authority Score -- a measure of the individual's distance from the director times his membership in an organizational group. Thus, an assistant supervisor (group 3) who was two men removed from the state director (level 3) would have an authority score of 9.

Closed Communication System -- a communication pattern which shows most of the information requests going to a limited number of individuals.

Communication Link -- the nomination of a person as a source of information or advice.

Gatekeeper -- a person who exercises influence over information entering or exiting the system; he is likely to be an administrator with authority to deny outsiders access to the system.

Informal Communication -- information exchange between members of the organization through channels other than those formal, specialized channels provided by the organizational structure.

Integration Score -- the number of people affected by the direct and indirect communication of an individual.

Isolates -- individuals who were not nominated as sources of advice and information by any other member of the organization.

Laggards -- individuals who are least likely to adopt an innovation.

Opinion Leaders -- individuals from whom others seek advice and information. In this study, it required at least five (5) nominations from colleagues before an individual was identified as an opinion leader.

Orientation-to-Change Score -- an index reflecting the respondent's perceptions of change in vocational and technical education.

Policy -- that information which guides the conduct of organizational activities.

Profession-Relevant Information -- that information deemed desirable in achieving organizational objectives, but not regarded as critical to the performance of the individual's routine function in that organization.

Relative Integration Score -- the sum of the communication links in a chain divided by N - 1. It includes dyad and triad relationships in addition to the number of primary links.

Sociometric Score -- a quantifiable measure usually gained by soliciting information from other members of a group. Two sociometric scores were computed for use in this study: the integration score and the relative integration score.

Work-Relevant Information -- that information critical to the performance of routine functions of the organization's employees.

APPENDICES

APPENDIX A

Statistical Tables

Table A-1

Number of Nominations Received by Opinion Leaders[a]

State Division #1	State Division #2
89	50
50	29
35	9
32	7
31	6
30	5
	5
	5

[a]Based on questions 1, 4, 5, 7, 8, and 9 in Section III of the Instrument. The next person in division #1 received thirteen nominations; in division #2, the next person received three nominations.

Table A-2

Orientation-to-Change Scores by Organizational Groups for State Division #1

Direction of Change Orientation	Organizational Groups: Director and Head State Supervisors N=10	Assistant State Supervisors N=28	Others N=6
Respondent perception of his orientation to change			
Mean	12.80	13.00	13.5
Variance	2.40	1.45	1.5
Respondent perception of his superiors' orientation to change			
Mean	12.60	12.80	13.50
Variance	1.38	3.65	.66
Respondent perception of "others" orientation to change			
Mean	11.10	11.18	12.17
Variance	1.21	3.19	2.57

Table A-3

Analysis of Variance of Relative Integration Scores on Matters of Policy, State Division #1

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Test
Between groups	4	4.44	1.11	22.20
Within groups	40	2.17	.05	
TOTALS	44	6.61		

With $_{4,40}$ d.f., 22.2 $>$ 3.83 required at .01 level of significance

Table A-4

Analysis of Variance of Relative Integration Scores on Matters of Policy, State Division #2

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Test
Between groups	4	2.90	.72	6.00
Within groups	40	4.67	.12	
TOTALS	44	7.59		

With $_{4,40}$ d.f., 6.00 $>$ 3.83 required at .01 level of significance

Table A-5

Analysis of Variance of Relative Integration Scores on Sources of Profession-Relevant and Work-Relevant Information for the Five Intraorganizational Groups State Division #1

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Test
Between groups	4	2.009	0.502	17.229
Between scores	1	0.002	0.002	0.057
Groups x scores	4	0.004	0.001	0.032
Within cells	80	2.332	0.029	
TOTALS	89	4.347		

With $_{1,80}$ d.f., .057 $<$ 3.96 required at the .05 level

Table A-6

Analysis of Variance of Relative Integration Scores on Sources of Profession-Relevant and Work-Relevant Information for the Five Intraorganizational Groups State Division #2

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Test
Between groups	4	2.173	0.543	35.930
Between scores	1	0.018	0.018	1.189
Groups x scores	4	0.040	0.010	0.653
Within cells	80	1.210	0.015	
TOTALS	89	3.441		

With $_{1,80}$ d.f., 1.189 $<$ 3.96 required at the .05 level

Table A-7

Product-moment Correlation and Regression Data for Hypothesis 8:

Orientation to change scores of respondents vary positively and proportionately with the extensiveness of the respondents' communication network.

X = orientation to change score
Y = relative integration score

State Division #1

$\Sigma X = 1680.000$ $\Sigma Y = 56.184$ $\Sigma XY = 1379.048$

$\Sigma X^2 = 63172.000$ $\Sigma Y^2 = 160.345$

$\bar{X} = 37.333$ $\bar{Y} = 0.804$

$B_0 = -1.523$ $B_1 = 0.062$

Regression line (prediction equation) is $Y = -1.523 + .062X$

$r = .116 < .297$ required at the .05 level

State Division #2

$\Sigma X = 795.20$ $\Sigma Y = 7.457$ $\Sigma XY = 139.529$

$\Sigma X^2 = 15324.50$ $\Sigma Y^2 = 8.616$

$\bar{X} = 17.671$ $\bar{Y} = 0.166$

$B_0 = 0.058$ $B_1 = 0.006$

Regression line (prediction equation) is $Y = 0.058 + 0.006X$

$r = .08 < .297$ required at the .05 level

Table A-8

Analysis of Variance for Regression of Orientation to Change Scores on Relative Integration Scores State Division #1

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Test
Regression	1	1.756	1.756	.58
Residual	43	129.492	3.011	
TOTALS	44	131.248		

With $_{1,43}$ d.f., $.58 < 4.07$ required at the .05 level

Table A-9

Analysis of Variance for Regression of Orientation to Change Scores on Relative Integration Scores State Division #2

Source of Variation	d.f.	Sum of Squares	Mean Squares	F Test
Regression	1	.047	.047	.28
Residual	43	7.333	.171	
TOTALS	44	7.380		

With $_{1,43}$ d.f., $.28 < 4.07$ required at the .05 level

APPENDIX B

Data Collection Instrument

THE CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION

1900 Kenny Road
Columbus, Ohio 43210

COMMUNICATION PATTERNS IN STATE DIVISIONS
QUESTIONNAIRE

SECTION I

THIS SECTION IS CONCERNED WITH GENERAL INFORMATION AND YOUR PARTICIPATION IN CERTAIN ACTIVITIES. PLEASE ANSWER ACCORDINGLY.

1. Present age _____

2. Number of years in this State Division of Vocational Education _____

3. Number of years in other State Divisions of Vocational Education ____

4. Number of years in the following occupational fields:

_____ a. College teaching
_____ b. College administration
_____ c. Public school teaching
_____ d. Public school administration
_____ e. Business
_____ f. Industry
_____ g. Other area in State Department of Education
_____ h. Other (*indicate*) _____

5. Amount of school completed (*check highest*)

_____ a. Less than Bachelor's
_____ b. Bachelor's degree
_____ c. Bachelor's plus
_____ d. Master's degree
_____ e. Master's plus
_____ f. Doctorate

6. Please list below (*by name*) all the organizations in each category to which you currently belong:

Social and community _____

_____

_____

_____

_____

_____

_____

Professional _____

_____

_____

_____

_____

_____

7. Please list below (*by name*) the professional journals (regardless of the academic area to which the journal is addressed) which you usually read.

_____

_____

_____

_____

_____

_____

_____

8. Please list below (*by name*) the regional and/or national meetings that you have attended in the past year.

_____

_____

_____

_____

_____

_____

_____

SECTION II

THE FOLLOWING STATEMENTS DEAL WITH FEELINGS OF PEOPLE IN YOUR STATE DIVISION OF VOCATIONAL EDUCATION. PLEASE INDICATE YOUR REACTIONS TO THESE STATEMENTS BY CHECKING THE APPROPRIATE RESPONSE.

SA - strongly agree
A - agree on the whole
U - undecided
D - disagree on the whole
SD - strongly disagree

		SA	A	U	D	SD
1.	My immediate supervisor in this State Division considers himself open to accepting new ideas.	☐	☐	☐	☐	☐
2.	Most of the professional staff in this organization feel that recent changes and innovations in vocational-technical education have been for the best.	☐	☐	☐	☐	☐
3.	I think I am open to accepting new ideas.	☐	☐	☐	☐	☐
4.	I feel that we must keep up with all new ideas in the field if we are ever to have an effective system of vocational-technical education.	☐	☐	☐	☐	☐
5.	My immediate supervisor feels that recent changes and innovations in vocational-technical education have been for the best.	☐	☐	☐	☐	☐
6.	Most of the professional staff in this State Division consider themselves open to accepting new ideas.	☐	☐	☐	☐	☐
7.	Most professional staff in this State Division feel that we must keep up with new ideas in the field if we are to have an effective system of vocational-technical education.	☐	☐	☐	☐	☐
8.	I feel strongly that recent changes and innovations in vocational-technical education have been for the best.	☐	☐	☐	☐	☐
9.	The majority of people in this State Division are more receptive to new ideas than I am.	☐	☐	☐	☐	☐
10.	My immediate supervisor in this State Division feels that we must keep up with new ideas in the field if we are ever to have an efficient system of vocational-technical education.	☐	☐	☐	☐	☐

SECTION III

IN THIS SECTION, WE ARE ASKING YOU TO LIST, *BY NAME*, PEOPLE TO WHOM YOU GO FOR PARTICULAR ADVICE, INFORMATION, OR SOCIAL CONTACT. YOU MAY LIST PEOPLE WHO ARE EITHER IN YOUR OWN STATE DIVISION OR OUTSIDE OF YOUR OWN STATE DIVISION.

REGARDLESS OF WHETHER THE PEOPLE YOU NAME ARE INSIDE OR OUTSIDE OF YOUR OWN ORGANIZATION, THE FIRST TIME THAT YOU LIST A PERSON, INDICATE HIS *NAME, TITLE, AND THE ORGANIZATION OR INSTITUTION WITH WHICH HE IS AFFILIATED*. ANY TIME AFTER THAT, YOU MAY IDENTIFY THIS PERSON BY NAME ONLY.

PLEASE LIST PEOPLE IN THE ORDER IN WHICH YOU WOULD ACTUALLY CONTACT THEM.

1. To whom do you usually go for information or advice related to the problems that may arise in your daily work?
   a. _____
   b. _____
   c. _____

2. To whom do you usually go for information about what is new in the general field of vocational-technical education?
   a. _____
   b. _____
   c. _____

3. With whom do you most often have lunch or coffee at work?
   a. _____
   b. _____
   c. _____

4. To whom do you usually go for information related to professional activities in vocational-technical education (such as journals or books being published; conventions being held, etc.)?
   a. _____
   b. _____
   c. _____

5. To whom do you usually go for information about what is new in your particular speciality within the field of vocational-technical education (e.g., agricultural education, home economics)?
   a. _____
   b. _____
   c. _____

6. To whom is your office closest (or with whom do you share an office)?
   a. _____
   b. _____
   c. _____

7. Whom do you regard as most knowledgeable and well-informed about your particular speciality in vocational-technical education?
   a. _____
   b. _____
   c. _____

8. Whom do you regard as most knowledgeable and well-informed about the policies of this organization?
   a. _____
   b. _____
   c. _____

9. Whom do you regard as most knowledgeable and well-informed about the general field of vocational-technical education?
   a. _____
   b. _____
   c. _____

10. From whom do you usually receive directions, assignments, or instructions related to your daily work?
    a. _____
    b. _____
    c. _____

11. With whom do you most often chat informally (in other words, not discussing work-related topics) during the working day?
    a. _____
    b. _____
    c. _____

12. To whom do you usually go when you have a complaint about your particular job or working conditions?
    a. _____
    b. _____
    c. _____

13. To whom do you usually issue directions, assignments, and instructions during the working day?
    a. _____
    b. _____
    c. _____

14. Whom do you most often see socially outside of work?
    a. _____
    b. _____
    c. _____

SECTION IV

IN THIS SECTION, WE ARE ASKING YOU ABOUT NEW IDEAS THAT YOU MAY HAVE EITHER DEVELOPED YOURSELF OR OBTAINED ELSEWHERE IN THE PAST YEAR.

1. Within the past year, have you yourself thought of some idea for an innovation which you believed would contribute to attaining the objectives or improving the functioning of this State Division?

Yes _____ No _____

(Note: Please list only the most important idea.)

a. If yes: Please describe your idea briefly below.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

b. If yes: To whom, if anybody, did you communicate this idea? Indicate below, by name and title.

_____

c. If yes: What was the fate of your idea?

_____ It has been tried out.
_____ It is still being considered.
_____ It was considered and turned down.
_____ It was not considered.
_____ I don't know.

2. Within the past year, have you obtained an idea from someone other than yourself which you believe would contribute to attaining the objectives by improving the functioning of this State Division?

Yes _____ No _____

(Note: Please identify only the most important idea.)

a. If yes: Where did you hear of this idea?

_____ Your supervisor in this State Division.
_____ Other employee in this State Division.
_____ Teacher in school system in this state.
_____ Principal or other administrator in a school system in this state.
_____ Teacher or administrator in a school system in another state.
_____ Magazine or journal.
_____ Workshop or institute.
_____ University professor.
_____ Other (*indicate*)

_____

b. If yes: Please describe this idea briefly below.

_____

_____

_____

_____

c. If yes: To whom, if anybody, did you communicate this idea? Indicate below, by name and title.

_____

d. If yes: What was the fate of this idea?

_____ It has been tried out.
_____ It is still being considered.
_____ It was considered and turned down.
_____ It was not considered.
_____ I don't know.

Revised Section II

SECTION II

THIS SECTION OF THE QUESTIONNAIRE IS CONCERNED WITH YOUR FEELINGS ABOUT CHANGE IN VOCATIONAL EDUCATION.

AFTER READING EACH STATEMENT, PLACE A CHECK (✓) IN ONE OF THE COLUMNS TO THE RIGHT TO INDICATE WHETHER YOU AGREE OR DISAGREE WITH THE STATEMENT. IF YOU CANNOT DECIDE ABOUT A STATEMENT, YOU MAY MARK IT WITH A QUESTION MARK.

THERE ARE NO "RIGHT" OR "WRONG" RESPONSES SINCE PEOPLE DIFFER IN THEIR OPINIONS ON THE ISSUE OF CHANGE IN VOCATIONAL EDUCATION. PLEASE INDICATE [illegible] BY A CHECK MARK IN THE APPROPRIATE COLUMN.

		Agree	Disagree
1.	Educational change does little to improve vocational-technical education.	____	____
2.	Most changes in vocational education programs are not necessarily for the best.	____	____
3.	The main purpose of vocational education legislation is to broaden programs to include instruction in a wide range of occupations.	____	____
4.	Broader based occupational preparation would encourage greater employment mobility.	____	____
5.	The effectiveness of change depends on how it is perceived by vocational teachers.	____	____
6.	Supervisors should influence vocational teachers to change behavior.	____	____
7.	The hope for vocational education lies in massive and radical program changes.	____	____
8.	Change agents are rabble-rousers.	____	____
9.	Dissemination of research results in vocational education is causing things to change too rapidly.	____	____
10.	Supervisors responsible for all vocational service areas will favor one service area at the expense of the other areas.	____	____
11.	Persons who feel competent to supervise all vocational service areas should be allowed to do so in selected schools.	____	____
12.	Most change improves vocational-technical education.	____	____
13.	Vocational education has adequate leadership for solving future problems.	____	____
14.	Recent changes in vocational education show little, if any, program improvement.	____	____
15.	One person cannot effectively supervise vocational education ranging across all service areas.	____	____
16.	Change is necessary for vocational education programs to stay up-to-date.	____	____
17.	Planned change is an essential step in providing effective vocational-technical education.	____	____
18.	Implementation of change causes chaos in an ongoing vocational-technical education program.	____	____
19.	Pilot (demonstration) schools make teachers more aware of new ideas.	____	____
20.	Schools should not go out of their way to provide vocational education opportunities for any special group of students.	____	____

APPENDIX C

Orientation to Change Statements

Scale Values on Attitude Statements

		Scale Value	Q Value
95.	Change agents are rabble-rousers.	1.100	0.600
21.	Implementation of changes causes chaos in an ongoing vocational-technical education program.	1.500	1.333
57.	Educational change does little to improve vocational-technical education.	1.714	1.125
29.	Schools should not go out of their way to provide vocational education opportunities for any special group of students.	2.000	1.333
76.	Dissemination of research results in vocational education is causing things to change too rapidly.	2.147	0.982
8.	Recent changes in vocational education show little, if any, program improvement.	2.357	1.464
86.	Most changes in vocational education programs are not necessarily for the best.	2.731	1.370
120.	Supervisors responsible for all vocational service areas will favor one service area at the expense of the other areas.	3.000	1.635
87.	One person cannot effectively supervise vocational education ranging across all service areas.	3.250	1.325
101.	Vocational education has adequate leadership for solving future problems.	3.423	1.196
75.	The effectiveness of change depends on how it is perceived by vocational teachers.	4.409	1.314
51.	Persons who feel competent to supervise all vocational service areas should be allowed to do so in selected schools.	4.577	1.304

	Statement	Scale Value	Q Value
46.	The main purpose of vocational education legislature is to broaden programs to include instruction in a wide range of occupations.	4.808	1.205
125.	Broader based occupational preparation would encourage greater employment mobility.	5.058	1.258
66.	Pilot (demonstration) schools make teachers more aware of new ideas.	5.255	1.204
113.	Supervisors should influence vocational teachers to change behavior.	5.500	1.307
126.	Most change improves vocational-technical education.	5.850	0.808
49.	Change is necessary for vocational education programs to stay up-to-date.	6.132	0.826
39.	Planned change is an essential step in providing effective vocational-technical education.	6.318	1.287
2.	The hope for vocational education lies in massive and radical program changes.	6.711	1.305

Instructions to Judges Rating Statements

The Q8 Project Team is constructing an instrument to measure the attitudes of SDVE staff members toward change in vocational education. We are asking your assistance in rating statements along a scale to indicate the degree of favorableness or unfavorableness of the statements toward change in vocational education. We are not interested in your own agreement or disagreement with the statements.

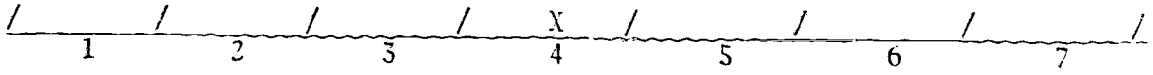
Procedure

Read each statement and judge where it belongs on the seven interval scale from extremely favorable to extremely unfavorable toward change in vocational education. Place an "X" in interval one if the statement indicates an extremely unfavorable attitude, interval four if it appears neutral, interval seven if it indicates an extremely favorable attitude, or in one of the other intervals representing the judged degree of favorableness.

Example

Below is an example of an attitude statement toward change in vocational education.

1. State leaders are responsible for much of the change in vocational education.



Unfavorable Toward Change in Vocational Education — Neutral — Favorable Toward Change in Vocational Education

The example judge placed an "X" in interval four to indicate that the statement appeared rather neutral.

Reminder

We are not interested in your personal attitude. We do want your judgment of how favorable or unfavorable each attitude statement is. Do not skip any statements.

MEDIAN VALUE 1.000 - 1.999

	Statement	Median Value	Q Value
95.	Change agents are rabble-rousers.	1.100	0.600
78.	Vocational teachers are justified in resisting change.	1.500	1.437
21.	Implementation of changes causes chaos in an ongoing vocational-technical education program.	1.500	1.333
20.	Today's vocational-technical programs are the best possible.	1.550	1.437
25.	Restructuring of the SDVE will destroy our good vocational education program.	1.654	1.154
19.	Most new things are just passing fads.	1.667	1.215
57.	Educational change does little to improve vocational-technical education.	1.714	1.125
53.	Students profit very little from updated vocational education programs.	1.750	1.250
9.	It is foolish to abandon something that has worked well for years.	1.885	1.212
1.	Innovation should not interface with our good vocational education programs.	1.937	0.969
23.	Individuals who try to manipulate the system do so for their own best interests.	1.937	0.969
22.	Most research is conducted by unrealistic professors.	1.962	1.333

MEDIAN VALUE 2.000 - 2.999

	Statement	Median Value	Q Value
29.	Schools should not go out of their way to provide vocational education opportunities for any special group of students.	2.000	1.333
76.	Dissemination of research results in vocational education is causing things to change too rapidly.	2.147	0.982
97.	Turmoil in reorganized SDVE's should encourage other states to avoid the mistake of reorganizing.	2.192	1.385
42.	People who develop a commitment to their job should resist attempts to rewrite their job description.	2.300	1.500
8.	Recent changes in vocational education show little, if any, program improvement.	2.357	1.464
61.	SDVE reorganization creates confusion and inefficiency.	2.500	1.432
128.	Research rarely results in an improved system of vocational education.	2.500	1.375
117.	Research activities have a minor role in vocational education.	2.583	1.358
56.	Students tend to react unfavorably toward change.	2.591	1.364
86.	Most changes in vocational education programs are not necessarily for the best.	2.731	1.370

MEDIAN VALUE 3.000 - 3.999

	Statement	Median Value	Q Value
120.	Supervisors responsible for all vocational service areas will favor one service area at the expense of the other areas.	3.000	1.655
102.	Any minority group member can go to school, learn a trade, and get a good job if he just wants to.	3.000	1.402
58.	Vocational education innovations are usually accepted before they can be evaluated.	3.227	1.455
87.	One person cannot effectively supervise vocational education ranging across all service areas.	3.250	1.325
101.	Vocational education has adequate leadership for solving future problems.	3.423	1.196
88.	The state vocational education advisory council should be held accountable to SDVE.	3.562	1.460
85.	Vocational teachers should have the chief state responsibility for conducting research.	3.937	1.031
65.	Schools have a responsibility to teach all children; children have the responsibility for learning.	3.974	0.789

MEDIAN VALUE 4.000 - 4.999

	Statement	Median Value	Q Value
89.	Vocational education courses and occupational proficiency standards should be established by the SDVE.	4.000	0.855
108.	Most vocational teachers can do a good teaching job with students in any area of vocational education.	4.055	1.050
34.	Whether the state vocational education advisory council is effective or not depends to a large extent upon its membership.	4.042	0.625
16.	The state vocational education advisory council should serve in an advisory capacity to the state board.	4.184	1.011
104.	Whether or not a change should be introduced in a vocational education program is dependent on the change being considered.	4.214	1.405
3.	Some programs in vocational education need improvement and other programs are quite acceptable.	4.222	1.052
30.	Research activities for vocational education should be conducted by agencies other than the SDVE.	4.250	1.302
60.	Most people change their behavior because they are dissatisfied.	4.333	1.292
54.	High school vocational teachers function best in a core structure of organization.	4.346	1.418
43.	Specialized abilities of SDVE staff are better utilized in a functional, across-the-board structure.	4.357	1.366
75.	The effectiveness of change depends on how it is perceived by vocational teachers.	4.409	1.314
92.	The effectiveness of change depends upon the personnel responsible for its implementation.	4.417	1.431

	Statement	Median Value	Q Value
122.	Vocational education should be required in public school curricula.	4.500	1.369
47.	If a child is not learning, the vocational teacher should give him special help.	4.500	1.250
51.	Persons who feel competent to supervise all vocational service areas should be allowed to do so in selected schools.	4.577	1.304
114.	We must reorganize the SDVE in compliance with federal legislation for vocational education.	4.591	1.423
18.	High school vocational students should be taught in a core program of occupational preparation.	4.600	1.500
48.	The SDVE should assume the leadership in conducting and implementing research in vocational education.	4.700	1.450
46.	The main purpose of vocational education legislation is to broaden programs to include instruction in a wide range of occupations.	4.808	1.203
94.	Vocational teachers should actively influence SDVE policy.	4.833	1.277
96.	A "carrot" is better than a "stick" in promoting change.	4.864	1.390
107.	Vocational education could be expanded in adult evening classes.	4.912	0.915

MEDIAN VALUE 5.000 - 5.999

	Statement	Median Value	Q Value
103.	The application of vocational education research must come about through a different mechanism at the state level if effective change is to occur.	5.000	1.437
125.	Broader based occupational preparation would encourage greater employment mobility.	5.038	1.238
84.	Schools should have special vocational programs which assure employment opportunities for minority students.	5.115	1.319
15.	The practice of assigning one supervisor across service areas in local schools deserves a trial in this state.	5.167	1.396
66.	Pilot (demonstration) schools make teachers more aware of new ideas.	5.233	1.204
59.	Systematic procedures for incorporating vocational teachers' ideas into the SDVE system should exist.	5.250	1.437
24.	Most vocational teachers are willing to try a new idea, at least tentatively.	5.313	1.106
10.	Existing vocational education programs should be improved.	5.409	1.364
113.	Supervisors should influence vocational teachers to change behavior.	5.500	1.307
44.	A newsletter relating useful innovations should be distributed to all vocational teachers to promote program improvement.	5.600	1.441
83.	Supervisors should influence the behavior of vocational teachers to start innovative programs.	5.667	1.342
115.	Providing for individual needs of high school students is best met through innovative vocational education programs.	5.731	1.308

	Statement	Median Value	Q Value
73.	The results of planned change are usually more positive than negative.	5.750	1.069
91.	As our problems change, so must our solutions.	5.808	1.385
126.	Most change improves vocational-technical education.	5.850	0.808
110.	Through carefully planned changes, vocational-technical programs can better suit the needs of students.	5.885	1.274

MEDIAN VALUE 6.000 - 6.999

	Statement	Median Value	Q Value
124.	Through change vocational-technical programs can keep up with the demands of a changing society.	6.000	0.833
112.	More rapid change is essential if vocational education is to catch up in this state.	6.045	1.464
62.	Continuous updating of vocational-technical programs is necessary to keep pace with the needs of the labor market.	6.100	1.067
49.	Change is necessary for vocational education programs to stay up-to-date.	6.132	0.826
100.	The expansion of new types of vocational education is vital to the development of the nation.	6.143	1.145
93.	Planned change is the key to a successful program of vocational-technical education.	6.167	1.277
39.	Planned change is an essential step in providing effective vocational-technical education.	6.318	1.287
32.	Immediate change is essential if vocational education programs are to avoid becoming extinct.	6.562	1.253
67.	Economic and social needs dictate that vocational education must be revolutionized immediately.	6.618	1.345
2.	The hope for vocational education lies in massive and radical program changes.	6.711	1.305

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